

Jejunal Adenocarcinoma with Concomitant Enterolith Presenting as Acute Intestinal Obstruction

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ABSTRACT

An enterolith is an infrequent clinical entity. It is generally diagnosed on imaging or at surgery. It is usually associated with underlying benign lesions like intestinal tuberculosis or Crohn's disease. Here, we report an unusual case of an elderly lady presenting with an acute small-bowel obstruction. On admission, her abdominal X-ray revealed a radio-opacity obstructing the jejunum. Her subsequent abdominal contrast-enhanced computed tomography revealed a big enterolith entrapped in a stricturous jejunal lesion. However, there was no pneumobilia. Consequently, she underwent an exploratory laparotomy followed by an "en-block" jejunal resection for suspiciously malignant impassable jejunal stricture. The cut-open specimen revealed 5 x 4 cm enterolith embedded in a tight ulcero-proliferative stricture. Histopathology confirmed jejunal adenocarcinoma. It is always prudent to suspect an underlying small-bowel malignancy while managing a seemingly straightforward case of small-bowel obstruction. The policy of prophylactic radical oncologic clearance may avoid inadvertent R1/R2 resections.

Key Words: Enterolith. Small bowel adenocarcinoma. Small bowel obstruction. Stricture. Jejunum.

INTRODUCTION

Despite the on-going surgical advances, acute small bowel obstruction remains a common surgical emergency encountered in the developing countries. While incarcerated inguinal hernias, adhesions and intussusception remain the more common causes, bezoars and enteroliths are considered among the rare pathologies.¹ In majority, enterolith are small (< 2 cm) and pass out without any symptoms.² Presence of an enterolith may indicate an underlying obstructing pathology like diverticulum, stricture, Crohn's disease, tuberculosis or even an underlying malignancy.

We discuss here a case of acute jejunal obstruction secondary to large enterolith which was totally obstructing the underlying adenocarcinoma-stricture.

CASE REPORT

A 73-year-old female presented to the emergency department with 3-day history of abdominal distension, colicky abdominal pain and constipation. For the last one year, the patient suffered intermittent episodes of bowel obstruction, for which she never reported to medical centre. She denied any history of tuberculosis, significant weight-loss, foreign body ingestion, psychiatric illness or other medical co-morbidities. She did not have

any abdominal surgeries in the past. On examination, she was pale and dehydrated. Her abdomen was distended with tinkling bowel sounds. Her rectum was empty on digital rectal examination. She was resuscitated with intravenous fluids.

Erect abdominal X-ray showed multiple air-fluid levels proximal to 5 x 4 cm radio-opaque shadow in the distal jejunum (Figure 1A). Contrast-Enhanced Computed Tomography (CECT) of her abdomen revealed dilated jejunal loops with an obstructing calcified lesion entrapped in a stricturous lesion at its terminal part (Figure 1B inset). The gallbladder was distended without any radio-opacities (Figure 1B). There was no pneumobilia or any evidence of liver secondaries.

With working diagnosis of acute small bowel obstruction due to underlying enterolith, the patient was prepared for surgery. On exploratory laparotomy, a hard mass-like lesion was found at the terminal part of jejunum with upstream dilatation of proximal bowel. The distal intestine was collapsed and there were no tell-tale signs of distant metastasis. Multiple hard small-bowel mesenteric lymph nodes ranging from 1 - 1.5 cm size were evident. The gallbladder was normal. These findings led to suspect the rare possibility of an underlying malignancy and hence an *en-block* jejunal resection with wide margins harbouring the stricturous lesion was performed followed by end-to-end anastomosis. Cut-opened specimen revealed 5 x 4 cm enterolith obstructing the underlying ulcero-proliferative growth (Figure 1C). Her postoperative period was uneventful. Histopathology showed moderately differentiated adenocarcinoma of jejunum (pT₃ pN₂ pM₀) with the proximal and the distal margins free of tumour. Six out of twelve mesenteric lymph nodes showed metastatic deposits. She received adjuvant chemotherapy.

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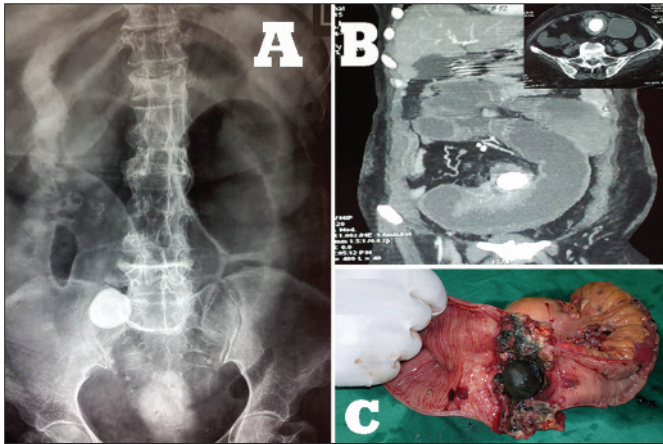


Figure 1: (A) Abdominal X-ray showing radio-opacity in the jejunum. Note the valvulae conniventes of proximal dilated jejunal loop. (B) CT scan showing radio-opaque enterolith in the terminal jejunum with upstream proximal dilatation. Note the normal liver and gallbladder. Inset-enterolith completely obstructing the lumen of jejunum. (C) Resected specimen showing enterolith. Note the underlying circumferential irregular mucosal lesion suggesting malignancy.

DISCUSSION

Enterolithiasis is a rather rare entity which is commonly reported in middle-aged females, probably due to the high incidence of gallstone ileus reported in them.^{1,2} Although unusual, their association with enteral diverticulosis and Crohn's disease is well described in the literature. But its association with an underlying malignancy is yet to be reported.³

Enteroliths are classified as true and false.⁴ The true variety is due to precipitation and deposition of substance in the food-chyme which may act as a nidus for formation of calculus especially in presence of stasis and acidic milieu. This phenomenon is frequently noticed in the diverticulum lined by the small intestinal mucosa.⁵ On the other hand, the false variety incorporates foreign bodies, fecoliths and bezoars.⁶

Enterolith, when small, may pass unnoticed. However, the larger ones can produce enterolith-ileus or a ball-valve effect manifested clinically as recurrent small-bowel obstruction. Gallstone ileus remains a common differential in such cases. It manifests as the Rigler's triad comprising ectopic gallstone/s, small bowel obstruction and pneumobilia as seen on the plain X-ray of the abdomen (revealed just in about 30% cases) and better appreciated on CECT scan.² Other etiologies include foreign-body ingestion, fecoliths and bezoars.⁷ Imaging studies like the abdominal X-ray and/or CECT scan generally clinch the diagnosis. However, because of its high accuracy and sensitivity, CECT scan is regarded as the modality of choice. On radiological imaging, enteroliths may be radiolucent or radio-opaque. While the radiolucent variety is commoner in the proximal small bowel, the radio-opaque one is frequently encountered in distal part of the small intestine.⁷

Pre-operative adequate hemodynamic resuscitation is the key to the successful outcome.⁸ Enteroliths

associated with benign etiologies are managed by various methods.¹ Some researchers believe in crushing the stone and dislodging it in the colon, while the others consider extracting it via a small enterotomy at the site of obstruction. Occasionally, a limited bowel resection may deem necessary. In earlier practice, the authors have successfully extracted enteroliths in two patients with gallstone ileus via a small enterotomy (after milking the enterolith proximally in non-edematous bowel). The real question arises when one finds an on-table surprise like the patient described in this report where an underlying hard mass and the associated mesenteric lymphadenopathy added to the confusion. In such scenarios, where there remains high suspicion of underlying malignancy, an *en-block* excision on the mass-lesion with wide bowel/mesenteric margins is always advocated.⁹ Such an extirpation plays a key-role towards the long-term survival of the patient. Apart from this, various adjuvant therapies have been tried; however, their role still remains elusive.⁹

In conclusion, in an elderly patient presenting with acute small bowel obstruction with enterolith the clinician should keep a high index of suspicion for small-bowel carcinoma. Also, when the pathological nature of the obstructing lesion remains obscure on the operating table, the surgeon should not hesitate to proceed with *en-block* resection of affected bowel (rather than a conservative one) to meet the oncologic principles prophylactically.

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